

## ABSTRACT

The present invention is directed to an apparatus and method for acquiring off-axis X-ray images of a plurality of regions of interest. The apparatus includes a source producing a beam of radiation, a surface to support at least a subset of the plurality of regions of interest, and a X-ray detector located to simultaneously receive portions of the beam that have passed through the subset of the plurality of regions of interest. The X-ray detector produces from the received portions of the beam an electronic representation of an image for each region of interest in the subset of the plurality of regions of interest. Any combination of the source, the surface, and the detector may be moveable to position the regions of interest within the beam.